

Do you need to know chemistry in order to be a good bone surgeon?

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Institute: The Weizmann Institute of Science, Rehovot.

Country: Israel

Subject: Chemistry.

Grade level: 10-12.

Curriculum content: Oxidation-Reduction, electrochemical series.

Kind of activity: Critical reading and group activity

Anticipated time: 4 lessons of 45 minutes each.

Competencies: Group activity and critical reading of an article; group laboratory work: perform virtual experiment, data collecting, explanation of the results; group discussion.

Assessment tool

Assessments:

First lesson:

It is possible to count the number of the questions proposed by the students, in order to follow their involvement in the activity.

We suggest that the important thing in this part of the lesson is the involvement of all students in the group work. Teachers can use rubrics, as shown in table 1 as an assessment tool of the group work.

Student Evaluation Tool Based on the Teacher's Observations

Group's subject: _____

Date: _____

| Dimension | Criteria for evaluation The student: | Students' name in the group | | | |
|--------------------------|---|-----------------------------|--|--|--|
| | | | | | |
| Functioning in the group | Contributes to the group discussion during the learning the subject | | | | |
| | Has patience for the group's members | | | | |

| | | | | | |
|------------------------------------|---|--|--|--|--|
| 50% | Knows and understands the objectives of the activity (active observation) | | | | |
| | Thinks in a creative manner and exhibits vision | | | | |
| | Average | | | | |
| Presenting the experiment - orally | Presents the activity in a clear and practical manner | | | | |
| | Presents knowledge and understanding of the subject | | | | |
| 50% | Uses precise and proper scientific language | | | | |
| | Average | | | | |

Table 1 – Student Evaluation Tool Based on the Teacher's Observations assessment tool.

Assessing the learning of the Redox concept:

The most important learning goal for this lesson is to construct the electrochemistry series. We suggest giving the students to answer written exercises regarding this subject. We also believe that every teacher will use the exercises s/he prefer.